EcoSphere Energy & SunCrest Energy's Monroe County Renewable Carbon to Energy Project Status Presentation

Presented to the
State Senate Energy Committee
February 19, 2009

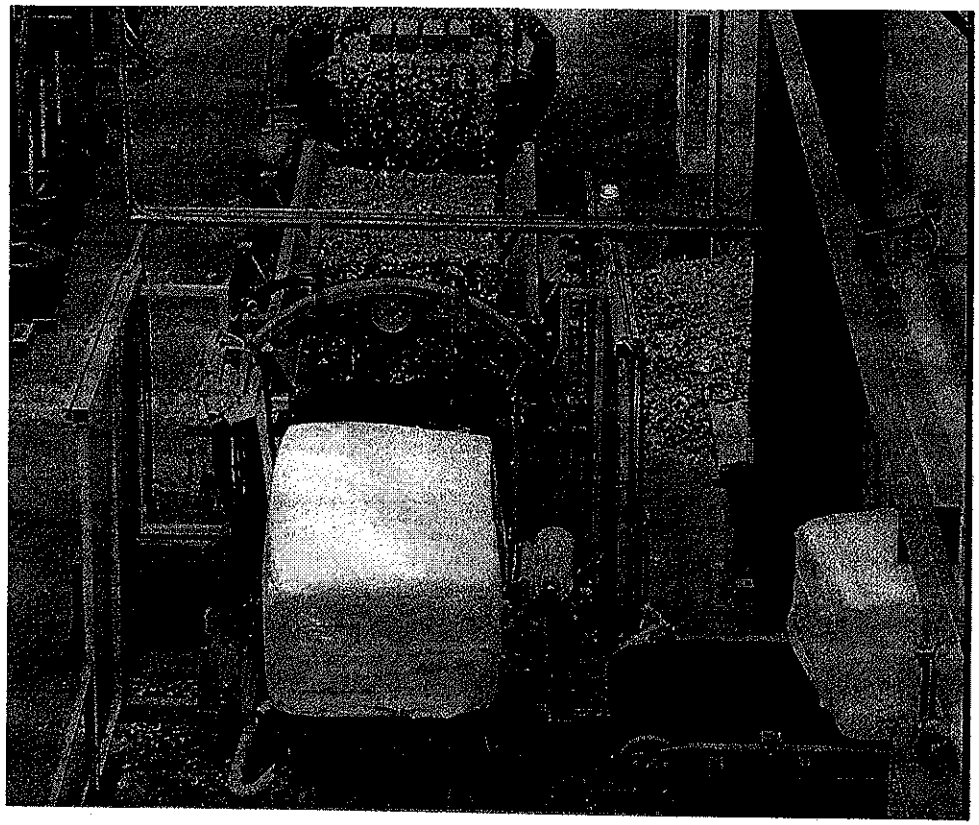
EcoSphere Energy, LLC

- EcoSphere Energy is a clean energy project development company.
- EcoSphere Energy combines/integrates compatible technologies to develop commercially financed projects. (Not Venture Capital based projects.)
- EcoSphere Energy has partnered with SunCrest Energy of Michigan to develop a renewable energy project in Monroe County.
- EcoSphere Energy has secured a firm commercial funding commitment to build a plant in Monroe County, Michigan for $500,000,000.
- Michigan is one of three plants that EcoSphere Energy has received firm funding commitments on and is moving forward with.

EcoSphere Energy Project Integrated Technologies

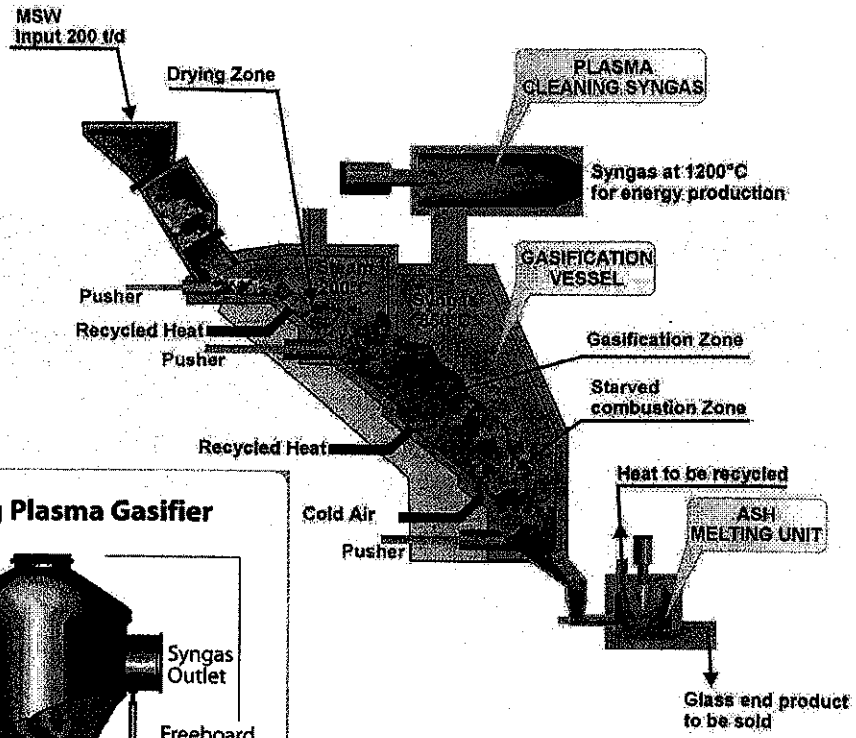
- Feedstock segregation & packaging
- Carbon Gasification production of Syngas
- Syngas generation of electricity
- CO_2 separation from stack gas
- CO_2 reformation into CO
- Syngas & CO conversion to Ethanol

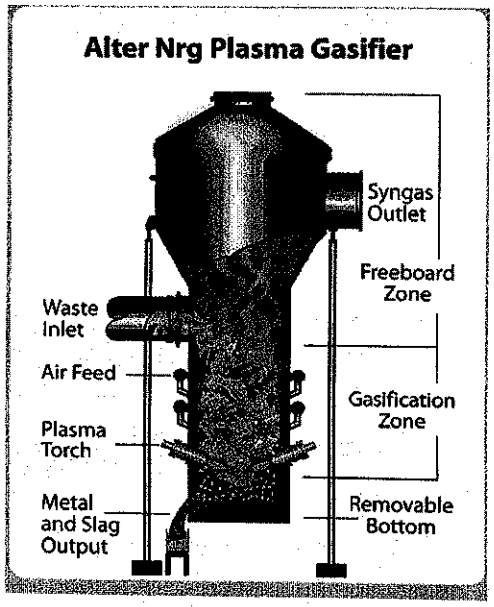
Feedstock Segregation & Packaging



- Feedstock supply agreements will be established with generators.
- The non carbon materials are removed from the feedstock at the source. (Source separation)
- The remaining carbonaceous feedstock will be baled and wrapped for delivery to the plant.

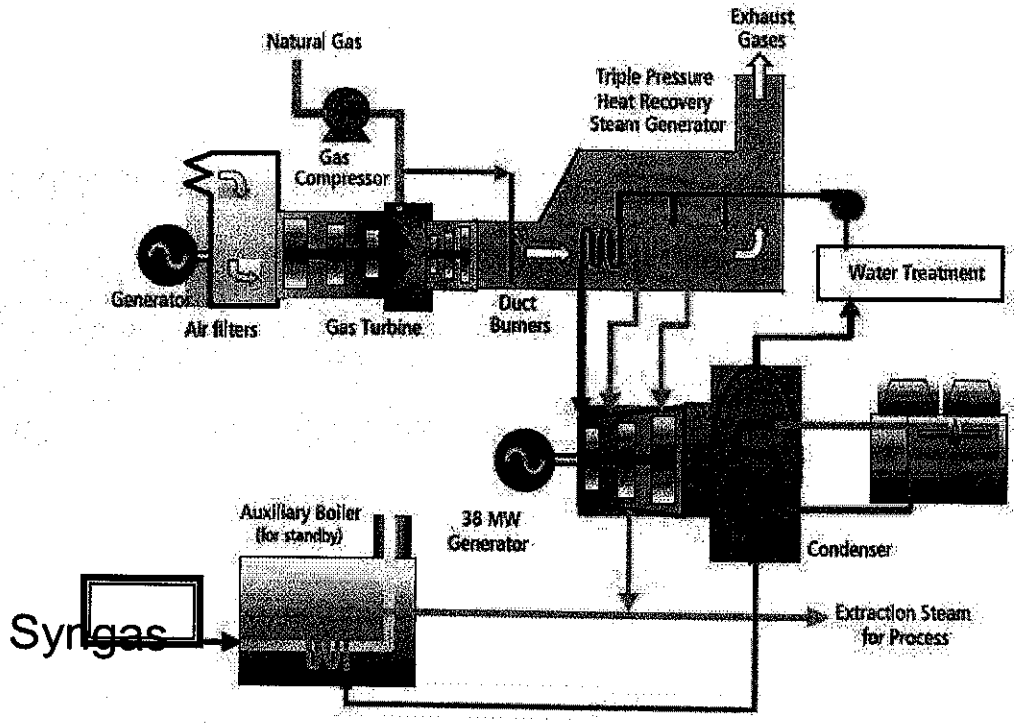
Gasification of Carbon Feedstock for the production of Synthesis Gas (Syngas)





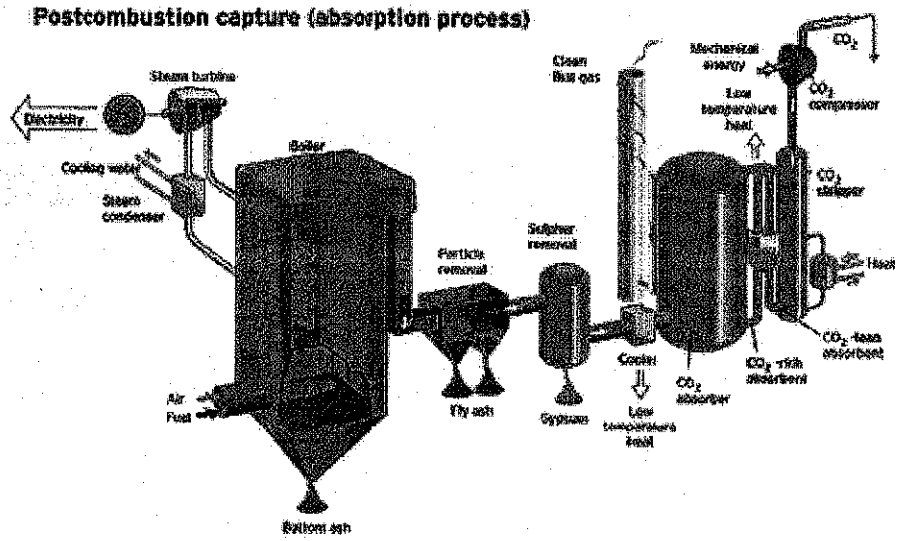
- Gasification uses energy to "crack" carbon molecules into a form where they can be reformed into energy products.
- Plant will use Plasma Arc Gasification
- Syngas is separated into two primary components.
  - Volatile – Complex volatiles & hydrogen (Used as a substitute for natural gas in the production of energy.
  - Non-Volatile – Primarily Carbon Monoxide (CO)
- Regulated constituents are removed for either recycling or proper disposal. Many traditional emission compounds such as NOX can be avoided by controls and high temperature of the plasma arc gasification process.

Syngas Used to Generate Electricity



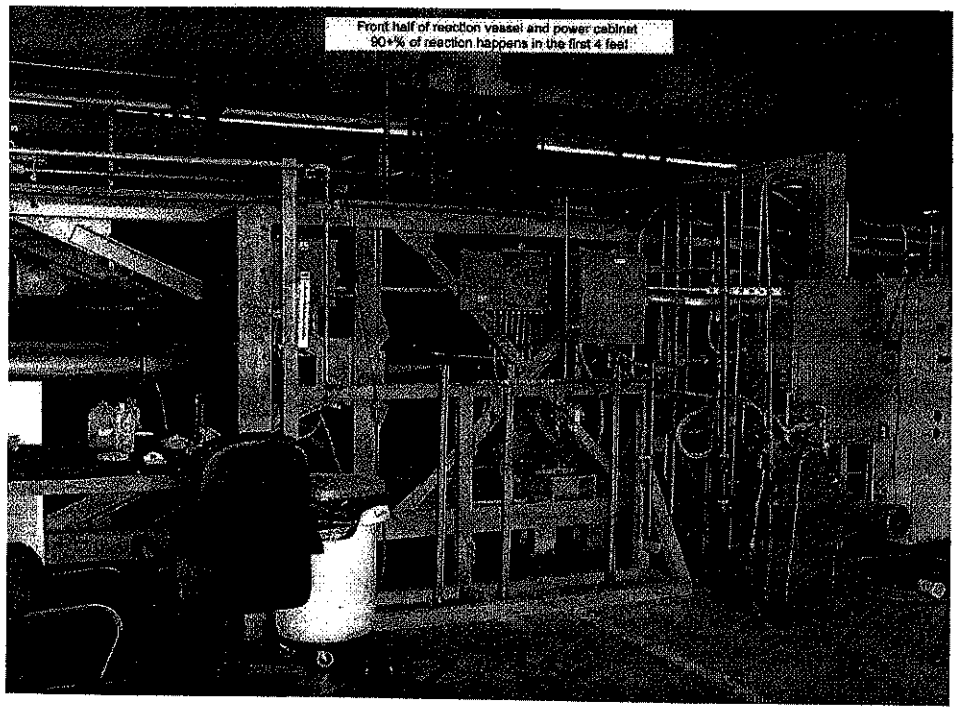
- Volatile portion of Syngas is sent to a traditional combined cycle power island
- Gas turbine uses Syngas to generate electricity.
- Waste heat is used to make steam and drive a steam turbine to make electricity.

CO_2 Separation from Turbine Stack Exhaust Stack Gases.



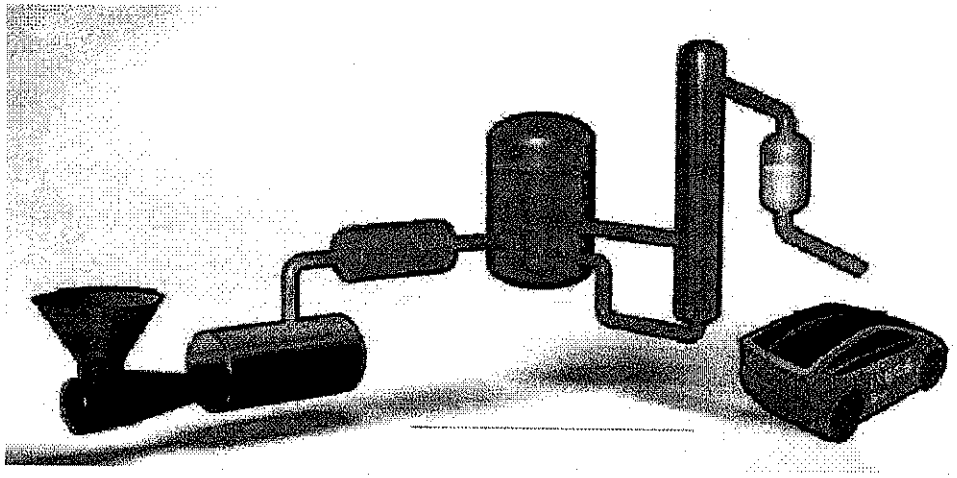
- Proven technology
- Exhaust gases are usually around 85% nitrogen.
- CO_2 can be as much as 12% of stack gases.
- Uses catalysts and thermal shift from waste heat of energy process.
- Critical to emerging CO_2 sequestration projects.

CO_2 Reformation into CO



- Proven & Patented Technology
- Not used because previously there is a limited market for CO. (Prior to CO to ethanol technology)
- Supports a well known chemical reaction that requires energy. (Woodard Reaction)
- With the supply of additional carbon gas the separated carbon bonds with oxygen to form CO in this thermal energy rich environment.

Conversion of CO_2 to Ethanol



- Multiple Proven Technologies.
  - BioCatalytic – EcoSphere has licenses for 22 plants
  - Chemical Catalytic
- Recently has become a viable and bankable technology.
- Allows the total utilization of carbon resources.
- Availability of ethanol production transforms normal economics to deliver commercial finance viability.

Retail Project Element

Michigan Dept. of Agriculture Director Mitch Irwin (left) and GM Vehicle Emissions Issues Director Bob Babik (right) look on as Meijer CEO Hank Meijer tests the latest E85 ethanol pump installation at the Meijer station.

Meijer, in partnership with GM opens the first of 20 E85 ethanol stations at their stores.

- EcoSphere has feedstock negotiations underway with Meijer Corporation for their carbon based feedstock.
- Agreement would make Meijer's 180 stores "Zero Waste" Meijer would become "Greenest" retail company in world.
- EcoSphere Ethanol would be sold through Meijer E85 gas stations.
- Meijer could buy green electricity from plant through a competitive Michigan retail supplier.

Project Progress

- In November 2008, EcoSphere Energy secured firm funding agreement for $500,000,000.
- Funding Agreement requires EcoSphere to secure permits and finalize power purchase contract, feedstock contracts and a site. Estimated cost $6.2, million.
- Requested short term loan from MEDC to secure $6.2 million in December.
- In February, MEDC, noted project merits but indicated they were out of money.

EcoSphere Offer to MEDC

- In exchange to providing a $6,200,000 loan EcoSphere offered to:
  - Pay MEDC 18% interest .
  - Reimburse MEDC from construction funding in 12 to 18 months, depending on permitting time required.
  - Pay MEDC a 5% profit share estimated at $2,200,000 a year for 20 years if approvals were completed by the end of January.
- Loan proceeds would only be spent on costs approved by finance partner for reimbursement.
- MEDC could act as fiduciary agent to assure all loan proceeds are directed to costs eligible for reimbursement.
- No technology risk.
- Accounting and Engineering Audits are funded with money to assure oversight.

Impacts of Ecosphere Energy Carbon Utilization Technology

- 80% to 85% of all solid waste could be carbonaceous feedstock.
- Sewage sludge could be carbon feedstock.
- CO_2 from Michigan's largest coal fired plant could be used to produce billions of gallons of ethanol per year.(10.5 billion gallons/year)
- Reduce Michigan's dependence on imported oil.
- Create good paying jobs for Michigan residents.
- Reduce Michigan's carbon footprint substantially.
- Michigan would be viewed as a leader in the emerging enviro/economic revolution.

Project Specific Elements

- Employment Phase I estimated at 50 family wage jobs.
- Expansion phases could top 200 with CO_2 technology implementation.
- Would be first project in US to use combined technologies.
- Would establish first major, non-agriculture based, renewable liquid fuel center in US.

Request to State of Michigan

- Provide funding to MEDC to allow them to make the requested loan for predevelopment funding for the EcoSphere Energy project in Monroe County.
- Allocate technical resources for a timely review of permit applications.
- Expedite consideration of future interconnection to electrical grid.
- Continued support policies and legislation that would allow Meijer to become greener by purchasing green electricity from EcoSphere plant.